

REMARKS

Claims 14 and 19 are now presented for examination. Claim 14 has been amended to define still more clearly what Applicants regard as their invention, in terms which distinguish over the art of record. Claim 14 is the only independent claim.

Claim 14 has been rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent 6,340,558 (Kubota et al.). Claim 19 has been rejected under 35 U.S.C. § 103(a) as unpatentable over Kubota, et al. as applied to Claim 14 in view of U.S. Patent 5,593,335 (Suzuki). With regard to the claims as currently amended, these rejections are respectfully traversed.

Independent Claim 14 as currently amended is directed to a method of manufacturing a substrate having a fine line on a substrate face. According to the method, a fine line is formed on the substrate surface. An end portion of the fine line in a longitudinal direction is divided into plural disjointed narrow width portions. The fine line is formed so that the width of the disjointed narrow width portions in a parallel direction to the substrate face is smaller than the width of a portion of the fine line adjacent to the fine line end portion divided into the plural disjointed narrow width portions. In a section of the fine line cut in the normal direction of the face forming the fine line on the substrate, the section has a part which is away from the substrate side end of the section. The length of a part of the section in the parallel direction to the substrate face is longer than the length of the substrate side end of the section in the parallel direction to the substrate face with sides extending diagonally outward from the substrate face. A photosensitive material is provided on the substrate. Light is projected from above the substrate onto a predetermined region of the photosensitive material and the photosensitive material is developed after the light projection.

Kubota, et al. discloses a polishing method for polishing a surface of a material to be polished and a fabrication method of a thin film magnetic head having a planarization process for planarizing the surface of the material to be polished by polishing to reduce variations of a residual film thickness on the surface of a material to be polished after polishing. An insulating film 14 is formed on an AlTiC substrate 12 and a bottom shielding layer 16 is formed thereover. After forming a coating layer 18 and etching a mask layer 22 as an etching mask, a protruding portion of the coating layer 18 at the bottom of the opening of the mask layer 22 is removed by a desired thickness. Since a protruding portion of the coating layer 18 on the periphery of the opening of the mask layer is suitably undercut, the protruding portion is shaved, thereby obtaining the coating layer 18 which is planarized as a whole.

It is one feature of Claim 14 as currently amended that an end portion of a fine line in the longitudinal direction on a substrate face is divided into plural disjoined narrow width portions, the width of the disjoined narrow width portions in a parallel direction to the substrate face is smaller than the width of the adjacent fine line portion adjacent to the divided fine line end. Advantageously, the strain energy applied to the end portion of the fine line is mitigated and end portion cracks and peeling do not occur.

Kubota, et al. may show a mask layer in Fig. 5 that has a series of spaced elements 22. Fig. 5 of Kubota, et al. , however, is a sectional drawing that is devoid of any information relating to related to the structure of the mask layer in the longitudinal direction. As a result, it is not possible to distinguish the shape of the elements of Fig. 5 in the longitudinal direction. The two points of the upper surface of element 22 in Fig. 5 have been indicated by the Examiner as being narrow width portions in one end in a “longitudinal direction”. The direction from the

lower surface of element 22 to the upper surface of element 22 in sectional view of Fig. 5, however, is clearly not the longitudinal direction of element 22 and Kubota, et al. is devoid of any suggestion as to the shape of element 22 in the unshown longitudinal direction. Further, the two points indicated by the Examiner as narrow width portions are not “disjoined narrow width portions” as in Claim 14. Accordingly, It is not seen that Kubota, et al. in any manner teaches or suggests the feature of Claim 14 of an end portion of a fine line in the longitudinal direction on a substrate face being divided into plural disjoined narrow width portions with the width of the disjoined narrow width portions in a parallel direction to the substrate face being smaller than the width of the adjacent fine line portion adjacent to the divided fine line end.

It is a further feature of Claim 14 as currently amended that a section of the fine line cut in a normal line direction on the face forming the fine line on the substrate is structured so that the section of a part which is away from the substrate side end of the section, and a length of the part of the section parallel to the substrate face is longer than the length of the substrate side end of the section parallel to the substrate face with sides extending diagonally outward from the substrate face. Fig. 5 of Kubota, et al. may show an element 22 having a lower surface on a coating layer 18 and an upper surface extending away from coating layer 18. As clearly shown in Fig. 5, element 22 has two vertical sides connecting the lower and upper surfaces of element 22. Accordingly, the length of the lower surface of element 22 on the layer 18 side is the same as the length of the upper surface of element 22. “L2” noted by the Examiner in the Office Action is only a portion of the length of the lower surface of element 22 in contact with the coating layer 18. In contrast to Fig. 5 of Kubota, et al., Fig. 17D of the application clearly shows the sides of the structure 1021 extending outward from its lower surface to its upper surface so that the upper

surface is longer than the lower surface and the upper surface away from the substrate side is the longer surface. Accordingly, it is not seen that Kubota, et al. teaches or suggests the feature of a section of the fine line cut in a normal line direction on the face forming the fine line on the substrate is structured so that the section of a part which is away from the substrate side end of the section, and a length of the part of the section parallel to the substrate face is longer than the length of the substrate side end of the section parallel to the substrate face with sides extending diagonally outward from the substrate face. In at least the foregoing respects, it is believed that Claim 14 as currently amended is completely distinguished from Kubota, et al. and is allowable.

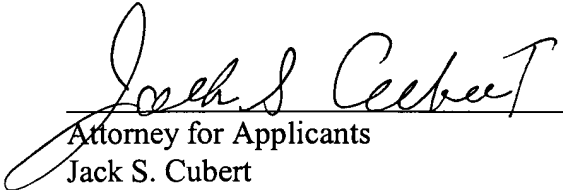
A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claim herein. That claim is therefore believed patentable over the art of record.

The other claim in this application is dependent from the independent claim discussed above and is therefore believed patentable for the same reasons. Since the dependent claim is also deemed to define an additional aspect of the invention, however, the reconsideration of its patentability on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable consideration and reconsideration and early passage to issue of the present application.

Applicants' attorney, Steven E. Warner, may be reached in our Washington, D.C. office by telephone at (202) 530-1010 All correspondence should continue to be directed to our address given below.

Respectfully submitted,



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